Introduction to Electronics

Programme course

6 credits

Analog elektronik 1

TNGE20

Valid from: 2017 Spring semester

Determined by
Board of Studies for Electrical Engineering, Physics and Mathematics

Date determined
2017-01-25

Main field of study
Electrical Engineering

Course level
First cycle

Advancement level
G1X

Course offered for
- Electronics Design Engineering, M Sc in Engineering

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
Circuit Theory

Intended learning outcomes
After completing this course students should be able to:
- analyse electric circuits with diods
- analyse electric circuits with operational amplifiers
- analyse transfer function with Bode plots
- analyse frequency response and stability in feedback amplifiers
- analyse active filters
- using computer systems for data acquisition and measurement

Course content
Basically theory of semiconductors (diodes and transistors). Amplifiers in general. Ideal and real amplifiers. Basically circuits with operational amplifiers. Frequency response and stability in feedback amplifiers. Basically circuits with transistor amplifiers. Simulation program for electronic circuits. Computer systems for data acquisition and measurement. Laboratory work.

Teaching and working methods
Education in form of lectures/exercises and laboratory work

Examination

LAB2	Laboratory work	3 credits	U, G
TEN2	Written examination	3 credits	U, 3, 4, 5

Grades

Four-grade scale, LiU, U, 3, 4, 5

Other information

Supplementary courses: Electronics

Department

Institutionen för teknik och naturvetenskap

Director of Studies or equivalent

Adriana Serban

Examiner

Kjell Karlsson

Course website and other links

http://www2.itn.liu.se/utbildning/kurs/

Education components

Preliminary scheduled hours: 50 h
Recommended self-study hours: 110 h

Course literature

Molin, Bengt: Analog elektronik 2:a uppl. , Studentlitteratur ISBN: 978-91-44-05367-7.

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.